

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An audio pre-amp and mid-band compressor circuit comprising:
 a pre-amplifier circuit having a pre-amplifier signal input responsive to [[an]] a buffered
input program signal and for processing the buffered input program signal to provide a [[low
range]] low-range band-pass signal, a mid-range band-pass signal and a [[high range]] high-range
band-pass signal and for adjusting or controlling the relative amplitude of each of the respective
low, mid and high range band-pass signals and for summing the [[amplitude controlled]] low-
range band-pass [[signals]] signal, the mid-range band-pass signal and the high-range band-pass
signal to obtain a compensated signal,
 a voltage controlled amplifier circuit having a signal input coupled to receive the
compensated signal, and a control signal input coupled to receive at least a sample portion of the
mid-range band-pass signal, the voltage controlled amplifier circuit being responsive to the
sample portion of the mid-range band-pass signal to scale the compensated signal to provide a
corrected output signal at an output terminal.
2. (original) The audio pre-amp and mid-band compressor circuit of claim 1 further
comprising:
 a buffer circuit responsive to the input program signal for buffering the input program
signal to provide an unmodified buffered input program signal to the pre-amplifier signal input.
3. (Currently Amended) The audio pre-amp and mid-band compressor circuit of
claim 1 wherein the [[a]] voltage controlled amplifier circuit further comprises:
 a buffer circuit responsive to the sample portion of the mid-range band-pass signal for
buffering the sample portion of the mid-range band-pass signal to provide a buffered sample
portion of the mid-range band-pass signal,

the voltage controlled amplifier circuit being responsive to the buffered sample portion of the mid-range band-pass signal to scale the compensated signal to provide [[an output a]] the corrected output signal.

4. (Currently Amended) The audio pre-amp and mid-band compressor circuit of claim 1 wherein the voltage controlled amplifier circuit further comprises:

a buffer circuit responsive to the sample portion of the mid-range band-pass signal for buffering the sample portion of the mid-range band-pass signal to provide a buffered sample portion of the mid-range band-pass signal,

a detector circuit having an input responsive to the buffered sample portion of the mid-range band-pass signal for providing a detected and filtered mid-range band-pass signal, and ~~the voltage controlled amplifier circuit having~~ a voltage controlled amplifier [[coupled]] having a control signal input coupled to be responsive to the detected and filtered mid-range band-pass signal to scale the compensated signal to provide the corrected output signal.

5. (Currently Amended) [[The]] An audio pre-amp and mid-band compressor circuit coupled to receive a program signal from a program signal source comprising:

a state-variable pre-amplifier responsive to a program input signal to provide a low range band-pass signal, a mid-range [[band-signal]] band-pass signal and a high range band-pass signal [[and]] for summing and scaling the [[a]] the low range band-pass signal, [[a]] the mid-range band-signal and [[a]] the high range band-pass signal [[providing]] to provide a compensated signal,

a voltage controlled amplifier circuit having

a signal input coupled to receive the compensated signal, and

a control signal input coupled to receive at least a sample portion of the mid-range band-pass signal, the voltage controlled amplifier circuit being responsive to the sample portion of the mid-range band-pass signal to scale the compensated signal to provide a corrected output signal characterized to remain within a predetermined linear amplitude range at an output terminal.

6. (Currently Amended) The audio pre-amp and mid-band compressor circuit of claim 5 wherein the mid-range [[compensated]] band-pass signal is inverted in phase with respect to the high-frequency [[compensated]] band-pass signal and the low-range [[compensated]] band-pass signal components.

7. (Currently Amended) The audio pre-amp and mid-band compressor circuit of claim 5 wherein the voltage controlled amplifier circuit having a signal input coupled to receive the compensated signal, and a control signal input coupled to receive at least a sample portion of the mid-range band-pass signal further comprises:

a buffered phase inverter circuit [[responsive to]] electrically connected to the sample portion of the mid-range band-pass signal to provide a buffered sample portion of the mid-range band-pass signal,

a detector circuit responsive to the buffered sample portion of the mid-range band-pass signal to provide a detected and filtered sample portion of the mid-range band-pass signal,

~~a filter for filtering the detected sample portion of the mid-range band-pass signal to provide a detected and filtered sample portion of the mid-range band-pass signal; and~~

a voltage controlled amplifier and buffer circuit having a signal input coupled to be responsive to the compensated signal and a control signal input coupled to be responsive to the detected and filtered sample portion of the mid-range band-pass signal, the voltage control amplifier circuit being characterized to scale the amplitude of the compensated signal in response to the detected and filtered sample portion of the mid-range band-pass signal to provide a corrected output signal that remains within a predetermined linear amplitude range at an output terminal.

8. (canceled).

9.(canceled)

10. (New) An audio pre-amp and mid-band compressor circuit coupled to receive a program signal from a program signal source comprising:

a state-variable pre-amplifier responsive to a program input signal to provide a low-range band-pass signal, a mid-range band-pass signal and a high-range band-pass signal and for summing and scaling the low-range band-pass signal, the mid-range band-pass signal and the high-range band-pass signal to provide a compensated signal, and

a voltage controlled amplifier circuit having

a signal input directly connected to receive the compensated signal, and

a control signal input directly connected to receive a sample portion of the mid-range band-pass signal, the voltage controlled amplifier circuit being further characterized to buffer, detect and filter the sample portion of the mid-range band-pass signal to provide a buffered, scaled, rectified and filtered control signal,

the voltage control amplifier circuit being further characterized as having a voltage control amplifier and buffer component (a VCA), the voltage control amplifier and buffer component having the signal input electrically connected to the compensated signal and the control signal input electrically connected to the buffered, scaled, rectified and filtered control signal to scale the amplitude of the compensated signal in response to the buffered, scaled, rectified and filtered control signal to provide a corrected output signal that remains within a predetermined linear amplitude range at an output terminal.

11. (New) The audio pre-amp and mid-band¹¹ compressor circuit of claim 10 wherein the mid-range band-pass signal is inverted in phase with respect to the high-range band-pass signal and the low-range band-pass signal components.

12. (New) The audio pre-amp and mid-band compressor circuit of claim 10 wherein the voltage control amplifier circuit is further characterized as having an inverting buffer having an input

connected to the mid-range band-pass signal and an output providing a buffered mid-range band-pass signal, and

a half wave rectifier having an input connected to the buffered mid-range band-pass signal to provide the buffered, scaled, rectified and filtered control signal